

We use PHP and a tool inside it called GD Library to make and work with images.

1. What is GD Library?

- GD is a built-in tool in PHP that helps to create images, draw shapes, write text, and save images.
- You can make images like .png, .jpg, .gif etc.

Before starting, check that GD is ON in PHP.

In xampp, it usually is ON by default

How to Create a Simple Image

php

```
<?php
```

```
// create a blank image of 400 x 200 pixels
```

```
$image = imagecreatetruecolor(400, 200);
```

```
// create some colors
```

```
$white = imagecolorallocate($image, 255, 255, 255); // white
```

```
$black = imagecolorallocate($image, 0, 0, 0); // black
```

```
$blue = imagecolorallocate($image, 0, 102, 204); // blue
```

```
// Step 3: Fill background with white
```

```
imagefilledrectangle($image, 0, 0, 400, 300, $white);
```

```
// Step 4: Draw a Line
```

```
imageline($image, 20, 20, 380, 20, $red);
```

```
// Step 7: Tell browser it's an image  
header("Content-Type: image/png");
```

```
// Step 8: Show the image  
imagepng($image);
```

```
// Step 9: Free memory  
imagedestroy($image);  
?>
```

```
<?php
// Set the content type to image
header('Content-Type: image/png');

// Create a blank image (width: 400, height: 200)
$image = imagecreatetruecolor(400, 200);

// Allocate background and line colors
$backgroundColor = imagecolorallocate($image, 255, 255, 255); // white
$lineColor = imagecolorallocate($image, 255, 0, 0); // red
```

```
imageline($image, 50, 50, 350, 150, $lineColor);

// Output the image
imagepng($image);

// Clean up
imagedestroy($image);
?>
```

How It Works:

- `imageline($image, x1, y1, x2, y2, $color);`
Draws a line from (x1, y1) to (x2, y2).

1. What is Computer Graphics in PHP?

In PHP, **Computer Graphics** means **creating, drawing, or editing images dynamically using code**.

PHP can generate graphics such as:

- Simple shapes (lines, circles, rectangles)
- Text on images
- Charts or watermarks
- Captcha images

Drawing Shapes in PHP

```
<?php
header("Content-Type: image/png");

$image = imagecreatetruecolor(400, 250);

$white = imagecolorallocate($image, 255, 255, 255);
$red    = imagecolorallocate($image, 255, 0, 0);
$blue   = imagecolorallocate($image, 0, 0, 255);

imagefill($image, 0, 0, $white);
```

```
imagerectangle($image, 50, 50, 350, 200, $red);

// Draw Line
imageline($image, 50, 50, 350, 200, $blue);

// Draw filled ellipse
imagefilledellipse($image, 200, 125, 100, 60, $blue);

imagepng($image);
imagedestroy($image);
?>
```

